DOCUMENT RESUME

ED 160 757 08 CE 016 885

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TITLE The Testing of Selected Strategies to Eliminate Sex Bias in Vocational Education Programs. Executive Summary.
INSTITUTION System Sciences, Inc., Chapel Hill, N.C.
SPONS AGENCY Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C. Div. of Research and Demonstration.
BUREAU NO 498AH50236
PUB DATE 77
GRANT 300-75-0258
NOTE 47p.; For related documents see CE 016 860-861, CE 016 881-882, and CE 016 886 ; Parts marginally legible due to print quality

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Administrator Attitudes; Change Strategies; Community Programs; Curriculum Development; Curriculum Evaluation; *Educational Assessment; Educational Needs; *Educational Strategies; Information Needs; Instructional Materials; Needs Assessment; Program Effectiveness; Research Needs; Resource Materials; Secondary Education; *Sex Discrimination; *Sex Stereotypes; State of the Art Reviews; State Programs; Student Attitudes; *Vocational Education

ABSTRACT

A study was conducted to identify, develop, and evaluate alternative strategies which vocational educators could employ with students, teachers, and/or administrators to eliminate and prevent the restrictive influences of sex stereotyping and sex bias on the interests, attitudes, occupational expectations, and training offered to secondary school students of both sexes. Using a three-phase methodology (an assessment of the state-of-the-art, a survey of vocational administrators' needs, and the development and evaluation of student curricular strategies), it was found that (1) state and local programs are in initial development stages; (2) information needs exist in the following areas: curricular materials for all students, teacher and administrator inservice and resource materials, program development information, and program implementation information; (3) curricular strategies and staff-created curricular materials have significant impact on student awareness, attitudes, and knowledge about sex bias; and (4) need exists for further research on the elimination of sex bias in vocational education. At the conclusion of the study, six products were published: this executive summary; a final technical report (CE 016 886); an administrator manual, entitled "Strategies to Eliminate Sex Stereotyping and Sex Bias" (CE 016 860); and three sets of student materials, entitled "Eliminating Sexism: Rewriting the Scripts" (CE 016 861); "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook" (CE 016 881); and "In Search of a Job: A Simulation Activity in Occupational Decision-Making" (CE 016 882). (Author/ELG)

ED160757

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THE TESTING OF SELECTED STRATEGIES TO ELIMINATE SEX BIAS IN VOCATIONAL EDUCATION PROGRAMS

Executive Summary

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Occupational and Adult Education
Division of Research and Demonstration
Washington, D.C.

CE 016 885

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PREFACE AND ACKNOWLEDGEMENTS

Specifications for this project originated in the Fiscal Year 1975 Research Program of the Office of Education in the form of the Part C Vocational Education Research Program. The project manager on behalf of the government was Dr. Jack Wilson, Research Projects Branch, Division of Research and Demonstration, Bureau of Occupational and Adult Education. The authors would like to express special thanks to Dr. Wilson for his patience, timely comments and support during the course of the project.

The work was performed by Ms. Rose M. Etheridge, Ms. Doris M. Lange, Ms. Mary W. Johnston, Ms. Susan Alston and Mr. Eric Rice in the North Carolina office of System Sciences, Inc.

Grateful acknowledgement is made for the cooperation and suggestions from many educators at local, state and federal levels who provided valuable insights into the practical and theoretical problems posed by the study objectives. The efforts of Ms. Amanda Smith, Mr. Jesse Clemmons and Ms. Meg Murphy of the North Carolina State Department of Public Instruction are especially appreciated. Likewise, the consultive assistance provided by Dr. Shirley McCune of the National Foundation for the Improvement of Education, Dr. Jack Blackburn of Auburn University, Dr. Glenn Freedman of the University of Houston, Clear Lake, Ms. Betty Lou Whitford, Mr. Dickson Corbett, Ms. Betheda Justice and Dr. Kinnard White of the University of North Carolina at Chapel Hill, and Dr. James Morrow and Dr. Robert Pittman of Western Carolina University is acknowledged.

A special note of thanks is extended to the North Carolina based school personnel of Chatham County, Jackson County, Moore County, Pitt County, Shelby City, Weldon City and Wilkes County for their help in the pilot, review and revision of project materials, particularly the student materials.

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AUTHORS' ABSTRACT

Primary study objectives focused on identifying, developing and evaluating alternative strategies which educators, particularly vocational educators, could/have employed with students, teachers and/or administrators to eliminate and prevent the restrictive influences of sex stereotyping and sex bias on the interests, attitudes, occupational expectations and training offered to students of both sexes. Emphasis was placed on secondary level vocational programs although information was collected on the entire range of programs, nationwide.

A three-phased methodology was used to develop project findings: (1) a national survey of programs related to vocational equity produced information on the state-of-the-art in state and local efforts to eliminate and prevent sex stereotyping and sex bias; (2) a survey of vocational education administrators generated data about their needs and potential receptivity to alternative strategies for eliminating sex bias in vocational education; and (3) the development and evaluation of student curricular strategies permitted assessment of the viability of curricular strategies to impact on student awareness, attitude and knowledge about the target issue.

Findings suggest that:

1) State and local programs are in initial development stages;
2) Educators have specific information needs including:
   a) curricular materials for all students;
   b) teacher and administrator in-service and resource materials;
   c) program development information such as program planning instruction, characteristics of effective programs, and evaluation assistance;
   d) program implementation information such as legal briefs, explanations of responsibilities, local measures of sex bias and alternative strategies from which to choose;
3) Curricular strategies, and particularly the staff-created curricular materials can/did have significant impacts on student cognitive and affective growth concerning awareness, attitudes and knowledge about sex bias and other work related issues; and
4) There is a series of specific research and development needs relative to the elimination of sex bias in vocational education.

The five volume report includes the Final Technical Report, an administrator manual entitled, "Strategies to Eliminate Sex Stereotyping and Sex Bias," and three different sets of student materials entitled, "Eliminating Sexism: Rewriting the Scripts"; "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook"; and "In Search of a Job: A Simulation Activity in Occupational Decision-Making."

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I. INTRODUCTION

Statement of Need

Categorizing or grouping people according to some characteristics which all persons in that category hold in common is one of the mechanisms human beings use to order their lives. The potential difficulty arises after categorizations when people within a category are often thought to share not only the common characteristic upon which they were grouped, but also are thought--often incorrectly--to share many behaviors, abilities or traits. These latter beliefs or judgments are called stereotypes.

Too often stereotypes are oversimplified and are false descriptions of the people in that category. Stereotypes influence behavior in several ways. Not only do they influence the way persons behave toward those about whom the stereotype is held, but also they influence the behavior of those persons who have been stereotyped. When persons are treated differently because they belong to a category of people about which a stereotype is held, discrimination has occurred. Discrimination serves to restrict or deny the rights, privileges and choices of those persons who are discriminated against and has become the basis for legal recourse.

Sex bias is a more inclusive term, including not only acts of sex discrimination, but also the entire range of behaviors of males or females directed toward females or males and based on the assumption that either sex is superior to the other.

The effects of sex stereotyping and sex bias are to limit the awareness, the potential, the options and the activities of females and males. Such limitations have restricted individual decisions and impeded individual advancement in a variety of life-choice determinations--particularly work-related life choices such as career options, training, hiring practices, earnings and occupational expectations.

Recognition of the effects and past repeated occurrences of sex stereotypic, sex biased and sex discriminatory practices in work-related education, together with new legal requirements to address these issues, established the need to conduct a study to determine what means have been and/or could be developed to impact on (a) the awareness and attitudes of all persons involved with vocational education--students, instructors and administrators--relative to overcoming sex stereotyping and sex bias and (b) the provision of services and training to vocational education students.

Purposes and Objectives

The central purpose of this research project was to identify and/or develop and evaluate alternative strategies which educators, particularly vocational administrators and instructors, do/could employ at student, instructor, or administrator levels to impact upon and overcome the restrictive influences of sex stereotyping and sex bias on the interests, attitudes, choice of occupations and training offered to students of both sexes. Specific objectives devised to guide the research activity included:

1) Develop and field test alternative strategies for the elimination of sex stereotyping and sex bias in public vocational education programs at the secondary school level;

2) Identify and develop strategies and recommendations useful to state level vocational education administrators in efforts to develop a statewide program for eliminating sex stereotyping and sex bias in vocational education programs; and

3) Compile information and categorize strategies useful to local vocational education administrators in developing and planning programs for eliminating sex bias, taking into account local resources.

Project products include three sets of student materials and an administrator's reference book on eliminating sex bias in vocational education. Abstracts of these materials are included in Section V, Products, of this Executive Summary.

II. METHODS AND PROCEDURES

The research activity was divided into three components, each having specific purposes and using different methodologies. The three components were:

Component One: Surveys of Program Types and Strategies
Component Two: Administrator Assessment of Need
Component Three: Assessment of Student Instructional Materials

Figure 1 presents a quick reference overview of the three research components, their purposes and the methodologies employed.

Component One: Surveys of Program Types and Strategies

The national and state surveys were designed to develop a comprehensive data base of programs and strategies in use at state and local levels to eliminate and prevent sex stereotpying and sex bias in vocational education. Three distinct surveys were conducted.

Survey \ Information	Purposes	Methodology and Respondents
Component One: Surveys of Program Types and Strategies	Develop a data base about current systems, programs and strategies in use nationwide to impact on the target issues.	All projects identified in public information sources, especially those with Federal funding.
Survey One: State Level Survey (state systems)	1. Identify types of approaches in use at the state level. 2. Identify elements supported in research literature. 3. Suggest elements of a prototypic approach.	Review of 12 State Level Programs.
Survey Two: Program Survey (local programs)	1. Identify and quantify emerging trends. 2. Identify characteristics and costs of effective programs.	Review of 92 programs, nationwide exclusive of North Carolina local plans
Survey Three: Local Strategies (strategies within local programs)	1. Identify, quantify and classify strategies proposed by local administrators. 2. Note preferred strategies, needs and areas of neglect.	Review of 40 North Carolina local plans to eliminate sex bias in vocational education.
Component Two: Administrator Assessment of Need	1. Identify and quantify needs, barriers and potential receptivity of administrators to alternative strategies to impact on the target issues. 3. Characterize the present concerns of North Carolina administrators relative to the target issues.	Interview with 21 North Carolina school administrators.
Component Three: Assessment of Student Instructional Materials	1. Assess viability of curricular strategies. 2. Assess the differential impact of the prepared curricular materials on student awareness, attitudes, interests pertaining to the target issues as well as the other cognitive and affective impacts of the materials. 3. Evaluate prepared curricular materials.	Instruction of 850 North Carolina 10th grade social studies students in experimental (pre-post) design with prepared curricula.

Fig. 1. Graphic Presentation of Research Components

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Survey One, the State Level Survey, was designed to create an information base about the state-of-the-art in state level systemic and programmatic efforts to encourage and assist local education agencies to eliminate and prevent sex stereotyping and sex bias in vocational education. Information was collected from and/or about (a) a dozen state level efforts, (b) related programs, and (c) conceptual models of change for educational organizations. Among the questions around which Survey One was designed were: (a) What trends exist among approaches? (b) What elements of different approaches are supported by empirical and theoretical evidence? and (c) What constitutes a prototypic or model approach?

Survey Two, the Program Survey, was designed to create an information base about local level programs across the nation designed to eliminate and prevent sex stereotyping and sex bias in vocational education. Particular concern was focused on emerging trends in target populations, purposes/goals and services provided/strategies used. Questions of program effectiveness and related differential cost were addressed as well.

Survey Three, the Local Strategies Survey, was designed to produce information about strategies planned/used in North Carolina local vocational education plans to eliminate and prevent sex bias. Plan analysis included classifying strategies according to target population, type of strategy employed, and identifying needs and barriers in the provision of services.

Over 200 programs were surveyed in the Component One Assessment with a return rate on information requests of approximately 75%.

Component Two: Administrator Assessment of Need

The administrator assessment of need activity was designed to collect data on the (a) needs and (b) receptivity of vocational education administrators in North Carolina to alternative strategies and approaches for overcoming and eliminating sex bias as well as the problems associated with that task. A stratified random sample of 15% of the school systems with vocational education administrators and/or planners was chosen for this survey.

The sample was stratified on (a) geographic region--tidewater, piedmont and mountains; (b) type of school system--municipality or county; and (c) size of school system--small (<2500), medium (2501-7000) and large (>7000).

An interview data collection instrument was prepared and used in the administrator assessment of needs. Questions addressed the topics of general information, barriers and needs, and strategies, with particular emphasis placed on identifying barriers and needs. The interviews were conducted in 30-minute segments, with 21 administrators, over a four-week time span, midway through the research project.

Component Three: Assessment of Student Instructional Materials

The initial literature review as well as preliminary findings from research Components One and Two indicated that student curricular materials was a strategy that had been neglected in many programs designed to eliminate and prevent sex stereotyping and sex bias in vocational education. The need was particularly evident for materials with the following characteristics:

1) Present information about the target issues of sex stereotyping, sex bias and sex discrimination;
2) Address the concerns of both female and male students;
3) Relate to the regular curriculum so as to facilitate merger with ongoing program;
4) Contain additional work-related information;
5) Based on a discrete, theoretical and/or empirical framework; and
6) Offer variation to provide classroom teachers options in choosing materials.

Project staff developed, implemented and assessed the impact of three alternate sets of curricular materials. The three sets of materials are:

1) Eliminating Sexism: Rewriting the Scripts ... An Informational Guide to Sex Stereotyping, Sex Bias and Sex Discrimination;
2) Sex Stereotyping, Bias and Discrimination in the Work of Work: A Student Workbook; and
3) In Search of a Job: A Simulation Activity in Occupational Decision-Making.

Synopses of these materials are presented in Section V, Products, of this Summary.

There were four principal inquiries around which the activities of this component were organized. First, project staff assessed the viability of curricular strategies in general, and these three sets of materials specifically, to impact on student awareness, attitudes and interests about the target issues. Second, staff compared the relative effectiveness of alternate curricular materials, each based on a discrete concept of change. Third, staff appraised the additional cognitive

and affective impacts of the materials on students. Fourth, staff gauged the overall difficulty, worth and usefulness of the materials according to student and teacher evaluation.

Each of the three sets of curricular materials was based on a discrete model of change. The models were devised by adapting and expanding ideas from Bennis, Benne and Chin's The Planning of Change[1] and Jacobsen's Power in Interpersonnel Relations.[2] A brief summary of each model is presented in Fig. 2, Conceptual Models of Change.

The stratification plan used in Component Two was employed to draw a 5% stratified random sample of North Carolina school districts for the assessment of curricular materials. While the selected sample was representative of North Carolina, the employed sample underrepresented major urban areas because the large urban system initially selected withdrew after initiation of project activity. Limitations of time and resources precluded selection of another urban system.

One high school was selected at random within each of the remaining seven sample school districts. Tenth grade social studies classes were used to implement the study within each of these high schools. Approximately 75% of the 10th grade students at the selected high schools were involved in the study. The remaining 25% of students were not involved because of prior instructional commitments. There is no reason to believe that the nonparticipating 25% of students differed from the included 75% in any way that could bias results.

Within each high school, curricular materials and control group status were assigned to classes of students at random although teachers retained some prerogative to assign particular sets of materials to particular classes in order to encourage teacher commitment and enthusiasm. Students in treatment groups used one and only one set of curricular materials.

A pretest-posttest design[3] was selected for use in the curricular assessment component and an assessment instrument was constructed. The instrument--the Student Awareness Measure (SAM)--was developed in three parts:

1) General Information--background on work experience, vocational education experience, sex and family background.

2) Jobs--indications of which jobs could and should be held by men, by women or by both men and women; importance of ranking jobs on a four-point scale; and expression of interest in holding jobs from a list of 25 occupations.

MODEL / INFORMATION	STRATEGY	ASSUMPTIONS	CRITERIA
1. Empirical-Rational Model	Eliminating Sexism: Rewriting the Scripts	1. Human decisions are based upon and guided by reason and adherence to rational self-interest. 2. Learning requires receptivity on the part of learner, but no particular active involvement to learn. 3. Change results from a change in technology and/or information.	1. Learning precedes experience so reception of information or new technology is basic ingredient of approach. 2. Learner assumes position of passive recepient of information. 3. Activities only present the facts rather than teach the process by which the facts, and future facts, are derived and/or resolved. 4. Individual self-interest is stressed as a vehicle for decision-making; change based on action, individual not systemic.
2. Normative-Reeducative Model	Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook	1. Human action and decisions are not solely based on rationality but rather are dependent upon and supported by socio-cultural norms and the attitude and values systems of individuals. 2. Humans are inherently active and transactional within their environment. 3. Change occurs through an alteration in normative systems (attitudes and values).	1. Learning is experience-based; active participation in reeducation is required. 2. Information is only one portion of solution; however, feedback is critical. 3. Non-conscious elements which impede problem solution must be clarified, examined and reconstructed. 4. Change occurs from within human systems rather than external to systems; it is not strictly individual.
3. Power-Coercive Model	In Search of a Job: A Simulation Activity in Occupational Decision-Making	1. Human decisions and actions are based upon a system of constraints and imperatives --legal, economic, moral and social--which are basic to power and compliance and serve to insure, direct and support action. 2. Learning requires adherence to an internalization of the power/compliance constraints. 3. Change results from external pressures and requirements and is systemic rather than individual.	1. Learning is situationally based; it involves action and reaction to the power, authority and compliance systems; it combines behavior and knowledge and involves power. 2. Change requires consideration of multiple subtle impingements, conscious and non-conscious, which must be systematically altered. The learner must be involved; often organized efforts (joint action) are required since systemic rather than individual efforts are required. 3. Change occurs from outside human systems rather than internal to them. 4. Life is systemic and organizational rather than individual.

Fig. 2. Conceptual Models of Change

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3) Attitudes--attitudes about work and women in the labor force assessed by student agreement or disagreement with statements using a four-point, forced-choice scale, ranging from "agree strongly" to "disagree strongly."

The posttest measure, a reordered version of the pretest, also included a section for student evaluation and questions concerning the impact of materials on student knowledge, skills and opinions.

The instrument was validated through a series of procedures including expert review, pilot use, and comparison of questionnaire and interview data. Expert review was performed by educational psychologists, evaluation specialists, tests and measurements specialists and vocational counselor educators. Among the elements these reviewers noted were (a) correspondence of questions to literature requirements, (b) language usage and sentence structure, (c) question placement and (d) item selection compared to the purposes of the instrument and the possible pool of questions.

The instrument was screened by each participating school system to insure that the instrument was not counter to local educational policy. In like manner, consultant advice was obtained from the school law specialists to insure that student rights and privacy were not abridged.

Reading level and response model difficulty were assessed and revised through a pilot of the instrument with a group of students like those included in the sample. This pilot also provided an opportunity to compare student responses on part two, "Jobs," with standardized responses on (a) the status of jobs and (b) job interest. The response rate on job status achieved above a 90% correspondence rate with similar occupational status measures.[4] The job preference findings, when compared to responses from the "Self Directed Search for Educational and Vocational Planning, Form E," achieved a similar correspondence. Lastly, interviews with a random sample of pilot students indicated that answers returned on part three of the instrument, "Interests," were accurate reflections of student opinion and attitude with a correspondence rate of over 95%.

Assessment was accomplished by administering the pretest, having classes use the materials for six to seven class sessions, and administering the posttest. All classes using the same set of curricular materials used the same parts of the package in the same order. It is noted that some instructors chose to continue using the materials after the posttest activity.

Control or nontreatment groups of students were established in each school, usually within each teacher's total number of classes. Half of each control group was administered the posttest only while the other half was administered pre- and posttest assessments in order to derive baseline data as well as to assess the possible effect of the instrument by itself.

III. FINDINGS AND RESULTS

Component One: Surveys of Program Types and Strategies

Component One of the research project was designed to produce information about the state-of-the-art in the systems (survey one), the programs (survey two), and the strategies (survey three) designed to eliminate and prevent sex stereotyping, bias and discrimination in vocational education.

Survey One: State Level Survey

Survey One, a state-of-the-art assessment of state level systems designed to address the target issues, featured a literature review of information on organizational change within educational stystems. Five different approaches for inducing change in educational organizations were identified: (a) diffusion,[5] (b) planned change,[6] (c) complex organizations,[7] (d) conflict[8] and (e) technical assistance.[9] Analysis revealed that while weaknesses in each model rendered the use of a single model less than optimal, noncontradictory strengths within each model could be combined into an effective approach. For example, if a State Education Agency (SEA) were to initiate an approach with the following elements, the strengths of each model would be utilized and the weaknesses minimized:

1) Develop a technical assistance system to broker a wide array of information and expertise (assessment, materials and evaluation);
2) Employ the conflict strategy of an overseeing agency such as the state legislature or state board of education mandating certain compliance requirements for vocational education (or all education) at the local level and charging the state education agency with providing whatever assistance is necessary to insure compliance;
3) Perform the prerequisite background research identifying the critical structural characteristics of local school systems and student populations in order to construct alternative programs that take local differences into account;
4) Develop multiple, alternative local strategies and the flexibility within the technical assistance system that permits compliance achievement within the framework of local needs, priorities and conditions; and

5) Provide an evaluation system for assessing the relative progress and/or effectiveness of local efforts for overcoming sex bias.

Most State Education Agencies use several of these elements. However, use of these five elements, in combination, would create a system that differs from the models in the literature and the systems in operation on several important points. First, the State Education Agency and the Local Education Agency would be required to become full partners in such a system. Second, the state agency would no longer be required to await an invitation before making contact with the local agency; further, contact would involve far more than compliance. Third, the state agency would be required to engineer a variety of approaches from which local educators can choose and adapt a local program reflecting local needs and concerns and using state personnel as ongoing consultants or as brokers to obtain other assistance. Fourth, empirical evidence would be available on which to base and justify decisions.

The field survey activity of survey one revealed that when current state level approaches were compared to the optimal model derived from the literature, several of the suggested elements were in use. For example, the North Carolina New Pioneers project developed a technical assistance capacity; the Pennsylvania program incorporated a strong compliance statement; and the Alabama/Mississippi/Louisiana Educational Equity Model specified procedures for collecting quantified, prioritized background data around which to design alternative programs which account for local differences. However, neither these three models nor the information reviewed about the approaches employed in Iowa, New Jersey, Georgia, Minnesota, New York, Michigan, and Alaska/California/Idaho/Montana/Nevada/Oregon/Washington revealed an approach that incorporated all the elements suggested as optimal. There were, however, some notable trends that emerged through review of such approaches including the following:

1) The majority of approaches include specifications and/or suggestions to study the problems of sex stereotyping, sex bias or sex discrimination in their state or in some aspect of their school systems. Such studies ranged from consideration of the language used in area vocational school descriptions to investigating the special services offered to women at institutions of higher education. Too often, the suggested studies are not combined with specific suggestions for local action based on empirical results;

2) A particularly popular approach is the self-study technique;

3) Few approaches include specifications for either state level program or local level project evaluation;

4) Few approaches include a statewide system to assess the relative progress of any LEA in eliminating and preventing sex stereotyping and bias;

5) Few approaches include compliance requirements other than the assumption of a "good faith" local effort, based on Federal law;

6) Few approaches systematically address more than one local variable that may impact on the occurrence and characteristics of sex stereotyping and sex bias;

7) Few approaches provide adequate alternative approaches from which local educators can choose/adapt to meet local needs; and

8) Few State Education Agencies view their position to be one of full partnership with LEA personnel in addressing these issues.

In fairness to State Education Agency programs designed to address the issues of sex stereotyping, sex bias and sex discrimination, particularly in vocational education, it is noted that government sanctioned concern for the issues is relatively new and that states have not been made strictly accountable until the Vocational Education Amendments of 1976 take effect and/or the Equal Rights Amendment is ratified.

Survey Two: Program Survey

The purpose of the second survey was to create an information base about the types of programs in use, nationwide, at the local level to overcome and eliminate sex stereotyping and sex bias. Of particular concern were trends, relative effectiveness and cost of the programs. From 140 programs contacted nationwide, information was collected on more than 90 projects purported to be concerned with more than basic research and directly related to vocational equity. Information permitted comparisons to be made on populations served, services provided/strategies used, program type and program goals/purposes. Programs were categorized by primary thrust of services provided/strategy used and by target population. When programs employed more than one strategy, the primary one was used; when there was no discernable primary strategy, the programs were not categorized. Results are depicted in Table 1.

Four basic target populations were served by the programs surveyed; the greatest numbers of programs were for women outside the formal educational system and professionals in education. No particular strategy was employed in excess of the other strategies with the possible exception of self-help, information strategies for women outside the formal education system and for professional educators. The

Table 1

SERVICES PROVIDED/STRATEGIES USED

Services Rendered/ Major Strategy Used / Target Population	Secondary School	Post-Secondary Women	Women Outside Formal Education System	Professionals in Education
1. Counseling Programs	1	2	6	0
2. Curricular Programs (for females)	5	2	2	2
3. Career Planning and Awareness Programs	6	1	3	1
4. Workshops	0	0	1	3
5. Conferences and Meetings (usually public relations)	0	0	4	5
6. Materials Revision	0	1	1	2
7. Self-Help Information (related to position)	0	0	12	11
8. Research (performed on target population)	8	3	3	1

(Each of the 92 programs categorized by predominate strategy and target population; 6 not classified because of inadequate information)

1. Counseling Programs--Programs, the principal thrust of which focused on providing counseling services--often testing and guidance and usually support--to the target population.

2. Curricular Programs--Programs, the principal thrust of which focused on providing instructional materials on the issues of sex stereotyping and sex bias to the target population.

3. Career Planning/Awareness Programs--Programs, the principal thrust of which was to assist in occupational planning or increase awareness of training options to the target population.

4. Workshops--Projects that focused several days of concentrated, directed instructional activities on the target issues for a particular target population.

5. Conferences/Meetings--Short-term projects that disseminated information and often served primarily a public relations function.

6. Materials Revision--Projects designed to use and/or upgrade present instructional materials to teach the target population about the issues of sex stereotyping and sex bias.

7. Self-Help Information--Projects designed to provide specific, useful information relevant to the position the person occupies such as counselor or underemployed female, that will assist that role occupant in coping more successfully.

8. Research--Projects performed with/on the target population, the major benefit from which is research information rather than specific services for the target population.

distribution of several strategies in terms of their target population does point up several paradoxes. While the vast majority of school administrators are men, there has been little attention given to administrative career planning/awareness/upgrading programs for women professionals in education. Similarly, the use of mini-courses and curricula for males and females had not been broached even though these approaches might be more effective and less disruptive than other strategies. Lastly, relatively few projects have been concerned with materials revision even though such a program, particularly at the secondary level, could be extemely effective in terms of cost, convenience and impact.

Trends in costs and effectiveness could not be discerned from available information. Cost comparisons were eliminated because the information was not available, could not be made comparable, and varied greatly by geographic area and target population.

The analysis of trends in effectiveness revealed either that very few present programs have systematic evaluation procedures that quantify effectiveness or that program newness has precluded evaluation. The lack of systematic evaluation procedures was particularly evident in programs designed for persons outside the formal educational system and for those designed for professional educators; the exception was workshops for professionals in education, most of which did include some evaluation activities although usually not systematic measures of awareness, attitude or content acquisition.

The majority of programs designed for postsecondary women did include systematic evaluation activities. Each of the curriculum and counseling projects at the postsecondary level included pretest-posttest assessment activities usually including content, attitude and employment information. For example, the Women's Re-Entry to Education Program of the San Jose City College employed the evaluation techniques of: (a) pretest-posttest surveys of student attitudes; (b) grade point average assessment; (c) attrition rate assessment; and (d) staff conferences.

Unfortunately, there were neither sufficient numbers of programs nor sufficient comparable information to permit derivation of the relative effectiveness of different strategies either by strategy or by target population. However, program review permitted description of the generic components of effective programs as presented in Fig. 3, Characteristics of Effective Programs.

1. Characteristic: Formal statements of program purposes, goals and objectives:

   a) purposes--justified reasons for undertaking the program;
   b) goals -- expected program outcomes and advantages; and
   c) objectives -- measurable expectations of accomplishment specified for both administrative and outcome activities.

2. Characteristic: Fairly narrow thrust in terms of selection of a particular target group such as underemployed women or secondary-level women vocational students in order to concentrate on the particular needs of one group of persons.

3. Characteristic: A conceptual framework or rationale that matches needs of the target population with components in the program and which justifies such procedures based on theory or empirical evidence.

4. Characteristic: A match between strategies employed and the accepted "legitimate" function of the parent institution:

   a) post-secondary level counseling and career awareness appeared particularly successful since such programs fit the legitimate function of two-year schools--that of preparing students for employment and assisting in job placement;
   b) adult women's centers and workshops were particularly successful since both strategies adhered to the legitimate adult practices of providing information to recipients who initiated contact with the program; and
   c) secondary curricular programs appeared successful because such programs adhered to the legitimate function of providing instruction and because these programs usually were unobtrusive.

5. Characteristic: Comprehensive, detailed directions to program implementers about how to use materials or establish and maintain services, thus reducing the importance of administrator and teacher personalities in program success.

6. Characteristic: Careful attention to assessment and evaluation procedures that provide process and product data. More specifically, procedures that provide feedback about on-going practice for planning purposes and quantified outcome data about the end effects of the program on the target population.

7. Characteristic: Cost information in per pupil expenditures for planning and accounting purposes.

Fig. 3. Characteristics of Effective Programs

Survey Three: Local Strategies

The third survey of Component One was a review of sex bias elimination plans for vocational education prepared by Local Education Agencies in North Carolina. The results of this review are depicted in Table 2, Local Strategies to Eliminate/ Prevent Sex Bias. This is an abbreviated table presenting only those activities that achieved the highest frequency of response.

Strategies suggested by local administrators were largely directed at student populations. Strategies involved most aspects of the high school program, ranging from the use of vocational clubs to student testing. However, rarely were activities combined in a structured program; rather they were usually listed as discrete,

Table 2

LOCAL STRATEGIES TO ELIMINATE/PREVENT SEX BIAS

Target Group	Strategy	Frequency
Student		
1.	Revise course descriptions	27
2.	Use school bulletin boards and newspapers for notices and requests	26
3.	Encourage youth organizations to recruit both sexes equally	18
4.	Encourage discussion of sex bias in at least one meeting of all clubs	11
5.	Use new sex bias-free materials; look for bias in old materials	10
6.	Utilize speakers who hold non-traditional occupations	10
7.	Student poll of sex bias awareness and attitudes	8
8.	All students tour vocational education facilities	6
9.	All students tour local businesses	6
10.	Replace courses directed toward one sex	6
11.	Eliminate sexist language and/or practices from club ceremonies	6
Counselor		
1.	In-service programs and materials to update information base of counselor	13
2.	Increase counselor visits to encourage equal opportunity for all	6
3.	Provide Title IX information	5
Teacher		
1.	Provide Title IX information	18
2.	Distribute and discuss materials from State Department of Public Instruction at faculty meeting	17
3.	In-service programs for information, strategies and materials	12
Administration		
1.	Establish Advisory Committee or Task Force to study problem	14
2.	Provide staff copies of Title IX	8
3.	Evaluate teachers' effectiveness	6
4.	Hold in-service workshops for administrators	5

unrelated exercises. Additionally, preferred administrator strategies were predominately informational with little or no indication that such information would be presented in a certain format or require particular actions or conclusions on the part of the recipient. This was also true of the in-service suggestions for counselors, teachers and administrators. Unfortunately, according to findings during the nationwide review of the local programs, information strategies such as conferences, workshops and self-help information guides have not been evaluated rigorously enough to determine the effectiveness of such strategies.

Followup conversations with several of the administrators who developed these plans indicated that currently all in-service materials and information must come from the State Education Agency. They suggested also that while curricular materials designed to prevent and eliminate sex bias in vocational education should be featured in local plans, it did not appear regularly because student based curricular materials were not available for use at the local level.

Component Two: Administrator Assessment of Need

The administrator assessment of need was designed to collect data on (a) the needs, and (b) the receptivity of vocational education administrators in North Carolina to alternative strategies and approaches for eliminating and preventing sex stereotyping and sex bias. The Administrator Interview was divided into three parts: general information, barriers and needs, and strategies. Results of the general information section questions revealed that (a) each system had a designated Title IX coordinator; (b) each system had an acceptable grievance plan; (c) the majority of administrators were aware of and had been in contact with at least one of the two North Carolina projects designed to assist local systems in overcoming sex bias; and (d) the majority of administrators were uncomfortable with the prospect of initiating conversation pertaining to sex bias within the community.

The questions on needs and barriers revealed that the primary needs of local administrators were as follows:

1) Information for administrative and teaching staff as well as student curricular materials relative to target issues;

2) Training for staff in non-sex stereotyped and non-sex biased procedures for use particularly in the classroom;

3) An unobstrusive intervention strategy, particularly one that was related to the basic tenet of education and could be absorbed into the regular curriculum rather than a program that drew a great deal of attention or required inordinate amounts of implementation time and effort; and

4) A system against which they could compare local progress in overcoming the problem.

Two observations were offered by the majority of administrators with reference to the above listed needs. In-service training and information, money and expertise uniformly was expected to come from outside the system; local administrators expressed reluctance, inability or unwillingness to accept such in-service activities as a legitimate local system obligation. In particular, administrators requested materials and information which would demonstrate compliance with federal and state laws. Second, while administrators voiced disapproval of compliance-based systems, they suggested that state assistance was needed in developing a statewide measurement program to ensure that local systems were meeting federal and state legal responsibilities. It is noted that the majority of local vocational education administrators opposed the use of enrollment figures in such a system because (a) it imposes a burden and (b) they indicated that enrollment figures bear no direct relationship to overcoming sex stereotyping, sex bias and sex discrimination in the world of work. In fact, enrollment in nontraditional courses could cause/result from reverse discrimination.

Administrators were asked to list the five most potent barriers to implementing a successful program to eliminate and prevent sex stereotyping and sex bias in vocational education. Findings suggest that public relations issues were the most critical barrier indicated by local vocational education administrators. Interestingly, however, the specific type of feared negative reaction varied between systems, with rural educators voicing more concern about community resentment and urban educators voicing more concern about staff resentment.

The second major barrier or concern pointed out by local administrators was information lack, both in terms of information for teachers and, more specifically, in terms of the lack of student materials pertinent to overcoming the problems created by sex stereotyping and bias.

Other barriers of particular concern were lack of funds for specific use in addressing the target issues and difficulty in creating/using assessment and evaluation procedures. Interestingly, there was a fairly widespread feeling that vocational education has been unfairly singled out as a target group upon which was placed more stringent conditions than other subject areas in public education. This suspicion contributed to a fairly uniform distrust and resentment of federal and state compliance requirements, especially in rural systems.

Component Three: Assessment of Student Instructional Materials

The concern of this assessment was the viability and impact of specifically developed curricula on students. SSI staff created three different sets of classroom-based curricular materials, each based on a different concept of change, each presenting information on sex stereotyping and sex bias in the world of work and each designed for all students. Strategies were designed to merge with ongoing school curricula and to meet the felt need of school administrators for unobtrusive strategies.

Impact on Students

Measures of curricular impact on awareness, interests and attitudes was achieved through pre- and post-assessment using the aforementioned Student Awareness Measure (SAM). The postest also included questions to assess the impact on student knowledge, skills and opinions about sex bias and other work related topics.

Variations in the numbers of valid responses restricted statistical comparison of the data. For example, when students were asked to indicate who--males, females or both could and should hold each of 25 occupations, 99% of all students answered the item nurse while only 79% of all students answered the item dental hygenist. Fortunately, the response rate was greatest for those occupations traditionally considered to be female or male occupations. Occupations such as nurse, electrician, executive secretary, receptionist, career military personnel, had response rates in excess of 98% across all treatments and assessments. This means that there were approximately 170 valid responses for each of the pretest and posttest assessments.

Examination of the gain scores between pre- and post-assessment indicated sizable increases in the number and the percentage of students who indicated that jobs could and should be held by both males and females. These increases were evident for each of the three curricular strategies, particularly for those occupations that have traditionally been considered moderate to low status and predominately female or male occupations, such as nurse, electrician and executive secretary. However, increases were not limited only to this group of occupations; they were also noted for high status occupations such as lawyer and doctor.

Increases for the 15 occupations that achieved a response rate above 95% in each assessment were compared using the Dunnet Test and the Test of Least Significant Differences. Differences in responses between the treatment and nontreatment groups were found to be statistically significant at the .01 level of confidence for each treatment group. When responses for all 25 occupations were used, only the responses from students using the materials "In Search of A Job: A Simulation Activity

in Occupational Decision-Making" and "Sex Stereotyping, Bias and Discrimination in the World of Work," were statistically significant.

Students who used the materials entitled, "In Search of A Job: A Simulation Activity," consistently responded with (a) a higher percentage of responses on each item and (b) a higher percentage and number of students who indicated that each and all occupations could and should be held by both females and males than did students who used either of the other sets of materials.

Table 3, Comparative Shifts of Student Awareness in Job/Sex Classifications, displays the percentage change of the 175 students per treatment group for all assessment groups for the 15 occupations with response rate in excess of 95%.

Table 3
COMPARATIVE SHIFTS OF STUDENT AWARENESS IN JOB/SEX CLASSIFICATIONS
(Percentage of students indicating occupations suitable for both sexes)

Strategies / Jobs	Pretest (All Respondents)	All Treatment Strategies (Post test)	Posttest Only	Pretest	Pretest-Posttest Only Postest	Pretest	Eliminating Sexism: Rewriting the Scripts Posttest	Pretest	Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook Posttest	Pretest	In Search of a Job: A Simulation Activity in Occupational Decision-Making Posttest
Career Military Officer	45	54	45	44	45	44	50	42	57	48	54
Executive Secretary	29	48	31	27	33	26	45	26	45	33	54
Police Officer	51	65	52	51	36	51	62	51	65	54	67
Computer Programmer	72	83	70	74	72	75	76	72	89	68	84
Receptionist	31	47	30	31	33	30	46	31	45	30	51
Clergy	43	50	44	46	50	37	48	40	41	46	51
High School Teacher	91	96	92	90	90	91	95	91	95	92	99
Electrician	29	42	27	32	32	27	35	26	38	33	52
Nurse	33	45	33	34	36	32	36	35	43	33	56
Lawyer	63	71	62	64	65	57	58	67	72	67	80
Truck Driver	36	46	37	37	38	41	45	33	41	34	53
Career Military Enlisted	55	74	53	59	60	55	63	59	78	57	82
Hairstylist	69	76	67	70	72	73	76	69	72	63	81
Medical Doctor	73	81	75	69	69	68	74	73	86	77	84
Dietician	56	82	55	54	57	55	80	53	82	53	89

Students were asked to indicate which job they were or were not interested in holding in order to assess impact on student interest. Comparison of pre- and post-assessment responses of students indicated little change in student interest level. Only in the group of students using the simulation activity was any change noticeable, and that change was probably due to the job descriptions included in those curricular materials.

Impact on student attitude was assessed through a series of questions about work, some of which addressed attitudes related to sex bias, particularly women at work. Responses to these questions are presented in Table 4,"Student Attitudes." The numbers depict the frequency distribution of student responses by percentage within each assessment group of students. Notably, in this set of questions there were few missing cases with the response rate for each question and across each group of students exceeding 95% and approaching 175 responses per assessment group.

Use of the materials had an impact on student attitudes about women in the world of work. For example, a significant percentage of students changed their attitude about holding positions of authority over men. Pretest results indicated that 38% of all students agreed or agreed strongly with the statement that women should not be in positions of authority over men. After using the materials, only 32% of the students still held to such positions. Similarly, during the pretest, 35% of all students disagreed or strongly disagreed with the statement that women live under unfair restrictions that ought to be done away with. During the posttest, only 29% of the students still held that view.

Chi Square tests were applied to the frequency distributions to determine if each posttest distribution varied significantly from the respective pretest distribution as well as from the posttest only and pretest/posttest only distributions. Findings suggested that the impacts for each of the treatment groups on questions 1, 2, 3 and 4 were significant at the .01 level of confidence with the exception of question 1 for the treatment group which used the materials "Eliminating Sexism: Rewriting the Scripts." This distribution differed with a confidence level of 0.5.

Findings were analyzed to determine differential effects on female and male students or on vocational education and nonvocational education students. For questions of who could and should hold jobs as well as questions of job importance and student interests, no differences in responses of these groups was noted. Few differences were evident in the quantitative questions of student attitude; the pre- and post-assessment shifts in attitude were general across all groups for all and

Table 4

SHIFTS IN FREQUENCY DISTRIBUTION OF STUDENT ATTITUDES RELATED TO WOMEN AT WORK

Attitudes Related to Sex Bias / Strategies		Pretest	All Treatment Strategies	Posttest Only	Pretest	Pretest-Posttest Only Posttest	Pretest	Eliminating Sexism: Rewriting the Scripts Posttest	Pretest	Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook Posttest	Pretest	In Search of a Job: A simulation Activity in Occupational Decision-Making Posttest
1. Women think less clearly than men.	Agree Strongly	9	3	9	8	7	11	6	8	2	10	2
	Agree	14	15	14	15	16	11	15	10	12	15	17
	Disagree	43	48	45	40	42	44	47	46	49	37	48
	Disagree Strongly	34	34	32	37	34	34	32 *	36	36 **	38	33 **
2. Women should be restricted in certain ways in which men have more freedom.	Agree Strongly	11	6	11	11	10	8	4	10	5	6	2
	Agree	27	27	27	27	26	26	26	27	23	25	33
	Disagree	40	40	40	39	40	39	45	44	45	42	33
	Disagree Strongly	23	28	23	23	24	27	25 **	19	27 **	27	32 **
3. Women should not be in positions of authority over men.	Agree Strongly	14	8	14	13	12	11	7	12	2	19	14
	Agree	22	25	22	24	25	18	28	31	24	17	17
	Disagree	37	46	36	35	37	43	45	34	55	36	45
	Disagree Strongly	27	21	28	28	26	28	20 **	22	19 **	28	24 **
4. Even today women live under unfair restrictions that ought to be done away with.	Agree Strongly	20	15	21	20	18	22	11	22	17	17	16
	Agree	45	56	45	44	47	45	62	50	55	42	52
	Disagree	28	23	27	28	28	29	21	21	22	33	26
	Disagree Strongly	7	6	7	8	7	4	6 **	7	6 **	8	6 **

(a) Distributions shifted significantly at the .05(*) level of confidence and the .01(**) level of confidence. Numbers are percentages of the 175 students in each of the 5 comparison groups.

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and each set of materials with the possible exception of the question on women in positions of authority over men. While pre-and post-assessment comparisons revealed no difference in impact for vocational education and nonvocational education students, differences were noted between female and male responses. Specifically, the shift in distribution from strongly agree and agree to disagree and strongly disagree was entirely attributable to female students except for those students who used the student workbook materials; for these latter students, the shift was attributable to both male and female students.

A third measure of the impact on students was achieved by asking students to indicate new knowledge, skills and opinions resultant from working with the materials. Findings are presented in Fig. 4, "Impacts Most Frequently Cited By Students For Each Alernative Curriculum." The items listed in the figure appeared on over 20% of student responses and are listed in descending order of response frequency. According to student responses, "Eliminating Sexism: Rewriting the Scripts" had the greatest impact on cognitive awareness and factual information while the materials entitled "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook" had the greatest impact on student opinion and skill acquisition.

Slightly different content acquisition was noted for each set of materials, especially in the non-sex bias related areas. Particularly evident was the strengthening of work values and the frequently cited opinion that there is pride in all work. Often this opinion was expanded by the respondent to indicate that, through working with the materials, the respondent's attitude about their own job had been improved. This was particularly true for students who used the materials entitled "Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook." Over 20% of the approximately 175 students who used these materials indicated that use of the materials improved their attitude about their own job. Similar increases in student valuation of work were noted for students who used the simulation activity.

There were male and female as well as vocational education and nonvocational education differences reported in the perceptions of student cognitive and affective impact of the materials as they related to sex bias. These differences are anecdotal in nature and primarily serve to point out how different daily life experiences help to shape perception. For example, vocational education students were attuned to information and activities pertaining to analyzing jobs, differences in pay and improving their general attitude toward work, especially their own. Nonvocational education students reported learning more about sex stereotyping in all types of situations, noting differences between females and males and acquiring skills related to securing a job.

Fig. 4. Impacts Most Frequently Cited By Students For Each Alternative Curriculum

Materials / Impacts	Eliminating Sexism: Rewriting the Scripts	Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook	In Search of a Job: A Simulation Activity in Occupational Decision-Making
Information Sex Bias Related	1. Sex stereotyping, bias and discrimination are real. 2. Earnings and responsibility discrepancies exist. 3. Provisions of the law provide relief.	1. Sex stereotyping, bias and discrimination are real. 2. Earnings and responsibility discrepancies exist. 3. Sex bias also affects males.	1. Sex stereotpying, bias and discrimination are real. 2. Equal opportunity to work is basic. 3. Pay discrepancies sometimes exist for males and females.
Additional	1. Right to work is basic. 2. Assorted factual information.	1. Right to work is basic. 2. Behavioral expectations are held by everyone.	1. Right to work is basic. 2. Job descriptions for occupations.
Skills Sex Bias Related	1. Analyze jobs for bias. 2. Treat all people more equally. 3. Address personal stereotypes.	1. Recognize instances of sex stereotyping and bias in want ads, applications, T.V., etc. 2. Interact with all people more honestly to solve problems. 3. Recognize, understand and overcome personal stereotypes.	1. Recognize instances of sex stereotyping and bias in want ads, applications and interviews. 2. Treat people equally in reaching joint decisions. 3. Treat people more open-mindedly.
Additional	1. Recognize behavioral expectations. 2. Improve reading.	1. Gather facts and draw conclusions. 2. Understand want ads, applications and interviews.	1. Read want ads and apply for jobs. 2. Make group decisions. 3. Interview and be interviewed.
Opinions Sex Bias Related	1. Women and men are equal and deserve to be treated that way. 2. Women are entitled to hold any and all jobs. 3. Men and women are alike on job.	1. Women and men are equal and deserve to be treated that way. 2. Right to work is basic for all citizens. 3. Men and women are more alike than different.	1. Many factors other than qualifications enter job offers. 2. Women and men have equal rights, especially to work. 3. Reverse discrimination is possible.
Additional	1. Environmental factors are critical. 2. Every citizen can use the law.	1. Conclusions are based on array of information. 2. Pride in all work and my work.	1. There is pride in all work. 2. Joint decisions require compromise.

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Results also suggested perceptual differences between males and females. Females, for example, reported noting information verifying equality between males and females, quantifying pay differences, instructions on how to bring charges of discrimination and teaching skills related to securing a job. Males reported noting information verifying that sex stereotyping, bias and discrimination are real, certifying that equal opportunity to work is basic and suggesting ways of treating all persons more equally.

Evaluation of Materials

Students evaluated the set of materials they used according to degree of difficulty, overall opinion, reaction to the materials and recommendations concerning material use. Quantified results of this evaluation are presented in Table 5, "Student Evaluation of Materials." The majority of students using each set of the materials indicated that the materials were of average difficulty in vocabulary, sentence structure and information as compared to their other classroom instructional materials. The vast majority considered each set of materials "average" or "better" than their regular classroom materials. It follows that the vast majority of students recommended these materials for use by other students.

Teacher evaluation of the materials corresponded closely with student evaluations. The only critical comments registered by teachers concerned some of the vocabulary in the self-instructional materials and some initial difficulty involving male students who worked in the simulation activity. Similar comments were voiced by students; the vocabulary in the self-instructional materials was difficult for some students. Further, the group of students who were difficult to involve, male vocational education students who already held jobs, constitute the primary group of students who did not recommend these materials. These students viewed the exercises as unimportant since they held jobs and/or thought the simulation resulted in women being offered positions that women did not deserve.

The materials were received favorably by administrators, after initial concern over the assessment instrument. Such acceptance is attributable to the relative unobtrusiveness of the strategy in terms of its "fit" with (a) existing curricula, (b) the legitimate functions of secondary education and (c) the felt need for strategies that did not create negative reactions from community or staff.

Table 5

STUDENT EVALUATION OF MATERIALS

Materials / Questions	Eliminating Sexism: Rewriting the Scripts	Sex Stereotyping, Bias and Discrimination in the World of Work: A Workbook	In Search of a Job: A Simulation Activity in Occupational Decision-Making	All Instructional Materials
1. What is your opinion of the overall value of the materials?	4% excellent 50% good 43% fair/average 3% poor	9% excellent 52% good 34% fair/average 5% poor	8% excellent 53% good 31% fair/average 8% poor	7% excellent 52% good 36% fair/average 5% poor
2. What is your opinion about the words (vocabulary) used in the materials?	4% too difficult 28% difficult but acceptable 59% average 9% simple	2% too difficult 22% difficult but acceptable 68% average 8% simple	2% too difficult 14% difficult but acceptable 79% average 5% simple	3% too difficult 21% difficult but acceptable 69% average 7% simple
3. What is your opinion about the sentences used in the materials?	0% too difficult 16% difficult but acceptable 76% average 8% simple	2% too difficult 21% difficult but acceptable 74% average 3% simple	4% too difficult 14% difficult but acceptable 79% average 3% simple	2% too difficult 16% difficult but acceptable 77% average 5% simple
4. What is your opinion about the information contained in these materials?	2% too difficult 8% difficult but acceptable 80% average 10% simple	2% too difficult 15% difficult but acceptable 80% average 3% simple	3% too difficult 17% difficult but acceptable 75% average 5% simple	2% too difficult 14% difficult but acceptable 79% average 5% simple
5. Would you recommend these materials for other students like yourselves?	86% yes	88% yes	75% yes	84% yes

Key:
- excellent (far better than regular classroom materials)
- good (somewhat better than regular classroom materials)
- fair (average to regular classroom materials)
- poor (worse than regular classroom materials)
- too difficult (much more difficult than most materials used in my classes)
- difficult but acceptable (slightly more difficult than most materials used in my classes)
- average (about the same as most materials used in my classes)
- simple (easier than most materials used in my classes)

IV. CONCLUSIONS AND CONSIDERATIONS FOR FUTURE ACTION

Component One: Survey of Program Types and Strategies

Survey findings indicate the state-of-the-art in projects designed to eliminate and prevent sex stereotyping and sex bias in vocational education is in its initial stages. Absence of large numbers of programs combined with the relative underdeveloped nature of many existing programs bear witness to the newness of the topic, the scarcity of pertinent research and field-based literature and the comparatively low priority of program efforts.

While several excellent programs have been initiated in states such as Pennsylvania, Minnesota, Iowa and North Carolina, operational programs at either state or local levels were irregular. Even within the existing state level programs, there were few indications that comprehensive systems had been developed to eliminate and prevent sex stereotyping and sex bias in vocational education. There had been little attention given to matters such as designing a state level data system for assessing relative progress, developing a wide array of approaches for local educators to use, or securing compliance requirements that serve to stimulate educators in both state and local education agencies.

At the local level, the same characteristics of newness, lack of priority and scarcity of information were in evidence. While a variety of approaches did exist, the absolute number of programs was not large; further, information about existing programs had not been widely distributed.

More critically, survey findings suggest that local plans to eliminate and prevent sex bias too often can be characterized as lists/descriptions of isolated activities rather than either programmatic approaches or integral components of ongoing school programs.

The lack of priority for programs addressing the target issues was evident through the apparent, relative inattention given to evaluation, program costs and potential innovativeness in program design. Simple and inexpensive programs which address the target issue through having students and teachers analyze/revise their own school's instructional and descriptive materials were largely ignored. Further, such fundamental program notions as specifying measurable administrative and outcome goals and objectives were infrequent.

Valid reasons for the underdeveloped nature of local and state level programs, in addition to the newness of the topic, include the scarcity of pertinent information for administrators. This was not to suggest that such information does not exist; rather, findings led project staff to conclude that the information (a) was widely scattered and very divergent in nature; (b) primarily concerned with the effects of sex bias rather than either the causes or the remedies; and (c) rarely has been assembled or translated into forms or sources immediately useful to educators. Among specific local program development information needs were:

1) What are the characteristics of effective programs addressing target issues ?
2) What kinds of evaluation are appropriate and how does one plan for and initiate such evaluation?
3) How can findings be successfully disseminated?
4) What types of current programs with which kinds of strategies exist around the nation?
5) What constitutes a programmatic effort and how can it be implemented?
6) What resources are available to local administrators and from whom?

Project staff concluded that efforts must be undertaken to increase the attention and commitment of educators to the topics of sex stereotyping and sex bias. More importantly, educators must also be provided with the necessary assistance in terms of evaluation systems, developmental information and resource incentives with which to do the job.

Component Two: Administrator Assessment of Need

Project staff concluded from findings of the administrator survey of need that the average local education administrator in North Carolina, including vocational education administrators, could be characterized in the following manner:

1) Uniformly in compliance with current minimum requirements of the law pertinent to the target issues;
2) Willing/able to suggest local activities that might impact on target issues;
3) Relatively uninformed about the particulars of the target issues;
4) Uncomfortable and possibly resentful of having to deal with community and staff with regard to the target issues; and
5) Possessing some clear-cut needs with regard to the target issues.

Each surveyed school system had a designated Title IX coordinator and a formalized grievance procedure. Further, many systems had prepared a voluntary local plan to eliminate and prevent sex bias in vocational education, including a number of local activities which might impact on the target issues.

Administrator discomfort was noted in the uniform concern with the public relations aspects of implementing programs designed to eliminate and prevent sex stereotyping and sex bias in vocational education. The concern for public relations effects was voiced by rural administrators as a concern for adverse community reaction and by urban administrators as a concern for adverse staff reaction.

The "relatively uninformed" characterization results from both the discomfort of being forced to deal with the issue, the particulars of which were not clear-cut, and the primary felt need of local administrators--information at student, instructor and administrator levels. Information needs revealed in Component Two were program implementation information needs as opposed to the program development information needs revealed in Component One. Among the needs revealed during this phase of the assessment were the following:

1) Needs for Students--Instructional materials pertinent to the target issue, designed for all students and which addressed the subjects of sex stereotyping, sex bias and sex discrimination within the basic framework of high school vocational education instruction.

2) Needs for Teachers--

   a) Workshop and in-service materials for teachers which addressed the teachers' role and responsibility with regard to sex stereotyping, sex bias and sex discrimination.

   b) Teacher resource materials designed to assist in the instructional process.

3) Needs for Administrators--

   a) Information detailing the administrator's legal position on practical and policy matters such as hiring, promotion, athletics, student rights, teacher rights and so forth.

   b) Information indicating where and from whom the administrator could get technical assistance concerning program development and evaluation. Such information should include information about ideas and successful programs.

Component Three: Assessment of Student Instructional Materials

Findings derived from the assessment of prepared instructional materials permitted project staff to conclude that curricular strategies had a significant impact on awareness and attitudes of all students--female or male, vocational education or nonvocational education--with regard to the issues of sex stereotyping, sex bias and sex discrimination. Further, such curricula had additional, significant, positive impacts on student knowledge, attitudes and values pertaining to work-related issues in addition to the target issues. Additionally, such strategies, including systematic assessment procedures, were introduced into the regular school curriculum without creating public or school staff negative reaction.

The materials developed during the project were enthusiastically received by students and staff.

Data derived during the study suggested that the three sets of curricular strategies developed and employed during the study changed student perceptions to the extent of permitting the following conclusions:

1) Classroom-based instructional materials are a viable strategy for impacting on the awareness, attitudes and possibly interests of all students relative to the issues of sex stereotyping, sex bias and sex discrimination in vocational education. The registered impact can have both cognitive and affective dimensions.

2) Instructional materials are an effective, unobtrusive strategy with which educators can address the target issues.

3) Instructional materials, designed primarily to address the issues of sex stereotyping and sex bias can convey additional, positive cognitive and affective content on a variety of subjects ranging from work values to job seeking skills.

4) Materials that actively project students into possible real-life situations involving systems of economic, social and moral constraints (power-coercive) have a greater impact on student awareness about the target issues than materials designed according to other concepts of change.

5) Materials that actively involve students in examining personal socio-cultural norms (normative-reeducative) have a greater impact on student attitudes about the target issues than materials designed according to other concepts of change.

6) Materials that convey factual information (empirical-rational) about the target issues in the world of work have a greater impact on student information acquisition about the target issues than materials designed according to other concepts of change.

7) Curricular materials are a legitimate and acceptable means of addressing the target issues according to the student population and the teaching staff.

8) The designed curricular materials were evaluated as "better than average" by students and teachers alike and were overwhelmingly recommended by those groups for use with other students. In addition, the designed materials were rated very favorably in comparison to other classroom curricular materials in terms of vocabulary, sentence structure and information presented.

Future Actions

Based on project findings and conclusions, it is recommended that the Bureau of Occupational and Adult Education, Office of Education, give consideration to actions such as the following:

1) Sponsor the development of an evaluation system with at least three alternative procedures for assessing the relative progress of a local program in eliminating and preventing sex bias in vocational education. Such an evaluation system should include either a baseline data system

against which to make comparisons, or provisions for establishing baseline information at the local or state level. It is suggested that some form of gain score system be considered which might address each of the following areas: (a) student awareness, (b) student attitude, (c) student content acquisition, (d) enrollment, (e) administrative practices such as hiring, promotion and so forth, (f) school matters such as curriculum, guidance and counseling, extracurricular activities, libraries and interaction patterns. Alternative procedures for establishing baseline data and performing evaluations are recommended in order to encourage states to choose and adapt systems to their own needs.

2) Create an information clearinghouse and newsletter for disseminating information about sex stereotyping and sex bias as it pertains to vocational education... perhaps using existing resources such as the newsletter of the National Foundation for the Improvement of Education or one of the journals in vocational education. Such a newsletter should be distributed at regular intervals to state and local vocational education administrators and should include current information on the law, exemplary programs, program planning and evaluation, curriculum and other topics of interest. The newsletter should be (a) free, (b) concise, and (c) contain information in immediately useable form for the local administrator. State Education Agencies should also be encouraged to provide such information updates to local administrators.

3) Sponsor a series of 10 regional workshops for state education agency personnel on the issue of sex bias and sex stereotyping in vocational education. These 2-5 day workshops should, at a minimum, include the following information: (a) information on effective system and program development; (b) information on pertinent laws and regulations; (c) information on model and/or effective state level and local level programs located nationwide; (d) information on program assessment and evaluation; (e) teacher and administrator workshop materials; (f) information on effective curriculum and/or instructional materials; (g) information on sources of assistance located throughout the nation; (h) information on sources of funds and materials located throughout the country; (i) information on program types and their impact; and (j) information on strategies for use in dealing with Local Education Agencies.

4) In 1978 sponsor a national assessment of programs designed to eliminate and prevent sex bias in vocational education. Such a study would have the advantage of accessing data from established programs and could render a state-of-the-art assessment on the provisions of the Education Amendments of 1976. The assessment should attend to programs at state and local level and must devise alternate systems for creating comparable data.

5) Implement a compliance reporting system at the Federal level for programs designed to overcome and eliminate sex stereotyping, bias and discrimination in vocational education. Even though this will heighten existing resentment of local administrators for federal guidelines, the evidence clearly indicates that vocational educators respond particularly well to compliance requirements in program development. However, it is recommended that the compliance program be designed to require only moderate amounts of time unless additional funding is made available with the program in order to support increased administrator responsibilities.

6) Encourage and provide assistance to state departments of public instruction and/or other public and private agencies to develop and implement school

administrator workshops to provide specific kinds of information to local vocational education administrators. Among the types of information to be included in such workshops are (a) information on the law and any compliance regulations; (b) strategies to overcome and eliminate sex bias, stereotyping and discrimination; (c) teacher workshop materials; (d) information on program planning and evaluation; (e) information on characteristics of and specifics of effective model programs which address the target issues; (f) information on administrative and schooling practices pertinent to sex bias such as hiring, promotion, materials and so forth; and (g) information on effective curriculum and/or instructional materials as well as teacher resource books.

7) Stimulate and encourage the development and dissemination of inexpensive, effective curricular materials for use directly in the classroom which address the issues of sex stereotyping, sex bias and sex discrimination in vocational education and which have the following characteristics:

   a) designed for both male and female students;

   b) use a variety of teaching techniques in order to personalize instruction;

   c) can be merged into the on-going basic curriculum as an integral part;

   d) have demonstrated levels of effectiveness and transportability capabilities;

   e) can be used to teach other skills and content as well as provide information on sex bias; and

   f) are of high interest and varying degrees of difficulty to stimulate students of all levels of academic achievement.

8) Sponsor the development of curricular materials which address the issues of sex stereotyping, sex bias and sex discrimination in vocational and career education for elementary aged school children since research evidence on occupational status and occupation preference indicates that these attitudes are formed at an early age.

9) Sponsor and encourage the research and development or instructional materials that can be used to teach the issues of sex stereotyping, sex bias and sex discrimination in vocational education using whatever current curricular materials are currently in use in vocational classes. For example, such materials might include a teacher guide and student workbook that contain exercises which analyze the language employed in the textbooks students use; it might assist students in conducting a self-study of practices in that school; or, it might teach students to analyze the pictures in the school yearbook for instances of bias. Such materials would be very inexpensive and highly effective since they would utilize the student's immediate environment to investigate sexism.

10) Sponsor a series of research and development projects to translate/convert the research and evaluation information on (a) the occurrences and the effects of sex stereotyping and sex bias in vocational education and (b) present program development into materials for use in classrooms and/or resource books for teachers. For example, if research evidence indicates that there are perceptual differences for males and females, convert that difference into effective instructional materials. If research evidence suggests that leadership behavior in groups of students varies by the gender mix of the groups, translate this fact into teaching resources. Such a project

would bridge the gap between research and practice by converting the sizable amount of research data on sex bias into results that practitioners can use.

11) Sponsor and encourage a series of research and development projects with the purposes being to identify and to quantify local social and school factors which correlate with or cause the occurrence of sex stereotyping and sex bias in vocational education. Among the factors that bear investigation are (a) student characteristics that evidence or facilitate sex stereotyping, (b) employer and union practices that contribute to stereotyping and bias, (c) school administrative practices that encourage or extend bias and (d) societal characteristics that correlate with the occurrences of bias. Studies such as the suggested differ from current research in that rather than identifying the effects of bias, the cause and correlates are addressed... and in a format other than self-study.

REFERENCES

1. Cambell, D. J., and J. C. Stanley, Experimental and Quasi-Experimental Designs for Research. (Chicago: Rand McNally and Co., 1963).

2. Bennis, W., K. Benne and R. Chin, The Planning of Change. (New York: Holt, Rinehart & Winston, 1961).

3. Jacobsen, W. D., Power in Interpersonal Relations. (Belmont, Calif.: Wadsworth Publishing Co., 1972).

4. Isaacson, L. E., "Systems for Classifying Occupations," in Career Information in Counseling and Teaching, 2nd edition. (Boston: Allyn and Bacon, Inc., 1971).

5. Havelock, R. G., Planning for Innovation Through Dissemination and Utilization of Knowledge. (Ann Arbor: University of Michigan Press, 1971). and Rogers, E. M. and F. Shoemaker, Communication of Innovations: A Cross Cultural Approach. (New York: Free Press, 1971).

6. Bennis, W., K. Benne and R. Chin, The Planning of Change, 2nd and 3rd editions. (New York: Holt, Rinehart and Winston, 1961). and French, W. L. and C. Bell, Organizational Development: Behavioral Science Interventions for Organizational Improvements. (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972).

7. Hage, J. and M. Aiken, Social Change in Complex Organizations. (New York: Random House, 1970).

8. Baldridge, J. V. and F. E. Deal, Managing Change in Educational Organizations. (New York: McCutchen Publishing Co., 1975); and Coser, L., The Functions of Social Conflict. (New York: Free Press, 1964); and Baldridge, J. V., Power and Conflict in the University: Research in the Sociology of Complex Organizations. (New York: J. Wiley, Publishers, 1971).

9. Stedman, D. J.,"The Technical Assistance System: A New Organizational Form for Improving Education," a paper presented at a Conference on Educational Support Systems, Washington, D. C., May, 1974.

V. PRODUCTS*

Title: Eliminating Sexism: Rewriting the Scripts

Authors: Rose M. Etheridge, Eric Rice

Audience: All students, eighth grade reading level and above

Concept of Change: Normative-Empirical Model

General Format: Self-instructional, informational materials

Topics: Differences Between Females and Males
Stereotypes, Discrimination and Sexism
Sex Stereotyping, Sex Bias and Sex Discrimination in the Work Force
Sex Stereotyping and Minority Groups
Sex Stereotyping and the Schools
Sex Discrimination and the Law
Teacher Materials

In addition, there is an extensive glossary, pre- and post-assessment instruments for the package, self-check questions throughout the materials and teacher materials for each unit. Teacher materials include an introduction, an abstract, aims, outcome cognitive and affective objectives, suggested teaching procedures, additional activities, evaluation suggestions and additional suggested references.

Time Requirements: 5 to 20 class sessions

Length: 203 pages

Cost: $20 including postage and handling

* It is noted that each of the products cited has a cost quoted. However, the products have been provided to the Office of Education in a limited number of copies, and it is understood that they are to be placed in the ERIC system by OE. The cost quoted is a cost-recovery estimate.

Title: Sex Stereotyping, Bias and Discrimination in the World of Work: A Student Workbook

Authors: Eric Rice, Rose M. Etheridge, Betheda F. Justice and Susan C. Alston

Audience: All students, eighth grade reading and above

Concept of Change: Normative-Reeducative Model

General Format: Discovery learning materials

Topics: Work

- What is Work
- Perceptions and Choices in the Work World
- Work in the Home
- Volunteer Work

Beliefs About Working Women and Men

- Stereotypes About Working Men and Women
- Misconceptions About Working Women and Men

Looking For A Job

- General Considerations Such as Sexism in Job Titles and Personal Values
- Want Ads
- Job Application

On The Job

- Salaries
- Discrimination in Local Business
- Legal Rights and Litigation

Teacher Materials

In addition a glossary is provided for student use.

Teacher materials include overall teacher introduction and suggestions as well as detailed suggestions for each unit. Within each unit are suggestions for an introduction, cognitive and affective outcome objectives, teaching suggestions including additional activities, evaluation suggestions, and teacher instructions for specific activities.

Time Requirements: 5 to 45 class sessions

Length: 159 pages

Cost: $15 including postage and handling

Title: In Search of a Job: A Simulation Activity in Occupational Decision-Making

Authors: Eric Rice, Susan C. Alston, Rose M. Etheridge

Audience: All students, eighth grade reading and above

Concept of Change: Power-Coercive Model

General Format: Life-like, group process simulation

Topics: Social, political and economic constraints that relate to individual choices and sex bias in the world of work
Family and employer role play
Job descriptions, wants ads, interview and applications in job seeking
Group decision-making processes
Analysis of sex bias in job seeking activities
Teacher materials

The package of materials includes wants ads, applications, job descriptions, family and employer descriptions, descriptions of the town and simulation activity, and an interview guide. There are also step-by-step day-by-day teacher instructions covering topics such as aims, space and materials allocation, scoring and debriefing procedures.

Time Requirements: 6 to 15 class sessions

Length: 82 pages

Cost: $10 including postage and handling

Title: Strategies to Eliminate Sex Stereotyping and Sex Bias

Authors: Eric Rice, Rose M. Etheridge

Audience: State and Local Educational Agencies, especially vocational education administrators

General Format: Informational Package

Topics:
1. Materials for use in the in-service training of educators (instructors and local administrators)
2. Recommendations for assessing, monitoring and/or evaluating the progress of local programs in eliminating and preventing sex stereotyping and sex bias
3. Recommendations covering state education agency approaches based on study findings
4. Information and recommendations concerning programmatic approaches, strategies and materials--including potential/actual effectiveness, possible costs, difficulties in implementing, etc.--that can be used by educators in vocational education to address the target issues
5. General information of concern to educational administrators pertaining to the target issues

Length: 150 pages

Cost: $15 including postage and handling

EXECUTIVE SUMMARY

THE TESTING OF SELECTED STRATEGIES TO ELIMINATE SEX BIAS IN VOCATIONAL EDUCATION PROGRAMS

SPRING 1977

U. S. DEPARTMENT OF HEALTH,
EDUCATION AND WELFARE
OFFICE OF EDUCATION
BUREAU OF OCCUPATIONAL
AND ADULT EDUCATION
DIVISION OF RESEARCH
AND DEMONSTRATION

System Sciences
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